

Attorney Docket No. FSUN-001/01US

PATENT

Express Mail Label Number: EV 525 579 156 US
Date of Deposit: August 22, 2005**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of P. Bryant CHASE, et al. Confirmation No.: 8210
Serial No.: 10/688,078 Group Art Unit: 1651
Filed: October 17, 2003 Examiner: Rosanne KOSSON
For: **BIOMOLECULAR-BASED ACTUATOR**

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT TRANSMITTAL

Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- ☒ In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- ☐ Please charge \$___ to Deposit Account No. (PA) 03-3117 (RE) 50-1283 for the total fee. This paper is being submitted in duplicate.

The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 03-311.

Dated: August 22, 2005

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(b)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,
Applicant(s) hereby submits the following information in conformance with 37 C.F.R.
§§1.97 and 1.98.

- ☒ Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08 is enclosed.
- ☐ No copies of the publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial No. ___ to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) ___ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ___ application serial no. ___ and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- ☐ Enclosed is a copy of a non-English publication(s) _____. English language publication ____ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) _____ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) _____ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed within any one of the following time periods:

- ☐ within three months from the filing date of this national application other than a CPA under 37 C.F.R. § 1.53(d);
- ☐ within three months from the date of entry of the national stage as set forth in 37 C.F.R. §1.491 in this international application;
- ☐ before the mailing date of a first office action on the merits; or
- ☒ before the mailing of a first office action after the filing of a request for continued examination under 37 C.F.R. § 1.114.

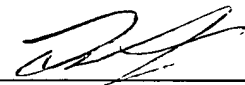
It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: August 22, 2005

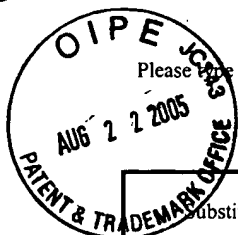
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PTO/SB/08B (08-00)

Substitute for form 1449B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (use as many sheets as necessary)			Complete if Known		
			Application Number	10/688,078	
			Filing Date	17 October 2003	
			First Named Inventor	P. Bryant Chase	
			Group Art Unit	1651	
Examiner Name	Roseanne KOSSON				
Sheet	1	of	2	Attorney Docket Number	FSUN-001/01US

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS				
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		T ²
	D1	BUNK, et al., Actomyosin motility on nanostructured surfaces. <i>Biochem. Biophys. Res. Commun.</i> 301:783-788 (2003)		
	D2	CHAEN, et al., Lower activation energy for sliding of F-actin on a less thermostable isoform of carp myosin, <i>J Biochem (Tokyo)</i> 120:788-791. (1996).		
	D3	CHASE, et al. Viscosity and solute dependence of F-actin translocation by rabbit skeletal heavy meromyosin. <i>Am J Physiol Cell Physiol</i> 278:C1088-C1098 (2000)		
	D4	CHOMCZYNSKI et al., Single-step method of RNA isolation by acid guanidinium thiocyanate-phenol-chloroform extraction. <i>Anal. Biochem.</i> 162:156-9 (1987)		
	D5	DONG, et al., Kinetic studies of calcium binding to the regulatory site of troponin C from cardiac muscle. <i>J. Biol. Chem.</i> 271:688-94 (1996).		
	D6	GORDON, et al. Calcium regulation of skeletal muscle thin filament motility in vitro. <i>Biophys. J.</i> 72:1295-1307 (1997)		
	D7	HESS et al., Molecular shuttles based on motor proteins: active transport in synthetic environments, <i>J. Biotechnol.</i> 82:67-85 (2001)		
	D8	HESS, et al., Light-Controlled Molecular Shuttles Made from Motor Proteins Carrying Cargo on Engineered Surfaces <i>Nano Lett.</i> 1:235-239 (2001)		
	D9	KÖHLER, et al., Familial hypertrophic cardiomyopathy mutations in troponin I (K183D, G203S, K206Q) enhance filament sliding. <i>Physiological Genomics</i> 14:117-128 (2003);		
	D10	KRON, et al., Assays for actin sliding movement over myosin-coated surfaces. <i>Methods Enzymol.</i> 196:399-416 (1991)		
	D11	KUNIOKA, et al., Innocuous labeling of the subfragment-2 region of skeletal muscle heavy meromyosin with a fluorescent polyacrylamide nanobead and visualization of individual heavy meromyosin molecules. <i>J Biochem (Tokyo)</i> 119:1024-32 (1996).		

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				Examiner Name	Roseanne KOSSON
Sheet	2	of	2	Attorney Docket Number	FSUN-001/01US
OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS					
	D12	LIANG, et al. Ca ²⁺ regulation of rabbit skeletal muscle thin filament sliding: role of cross-bridge number. <i>Biophys. J.</i> 85:1775-1786 (2003)			
	D13	LIMBERIS, et al., Polarized Alignment and Surface Immobilization of Microtubules for Kinesin-Powered Nanodevices, <i>Nano Lett.</i> 1:277-280 (2001)			
	D14	MARGOSSIAN et al., Preparation of Myosin and its Subfragments from Rabbit Skeletal Muscle. <i>Methods Enzymol.</i> 85(Pt B): 55-71 (1982)			
	D15	NIELSCH, et al., Hexagonally ordered 100 nm period nickel nanwire arrays, <i>Appl Phys Lett</i> 79:1360-1362 (2001).			
	D16	POTTER, Preparation of troponin and its subunits. <i>Methods Enzymol.</i> 85:241-263 (1982)			
	D17	SCHMIDT, et al., Force Tolerance of Hybrid Nanodevices, <i>Nano Lett.</i> 2:1229-1233 (2002)			
	D18	SELLERS and KACHAR, Polarity and velocity of sliding filaments: control of direction by actin and of speed by myosin, <i>Science</i> 249:406-408 (1990)			
	D19	SIDELL, et al., The eurythermal myofibrillar protein complex of the mummichog (<i>Fundulus heteroclitus</i>): adaptation to a fluctuating thermal environment, <i>J Comp Physiol</i> 153:167-173 (1983).			
	D20	SOONG, et al., Powering an inorganic nanodevice with a biomolecular motor, <i>Science</i> 290:1555-1558 (2000)			
	D21	SUZUKI, et al., Control of actin moving trajectory by patterned poly(methylmethacrylate) tracks. <i>Biophys. J.</i> 72:1997-2001 (1997)			
	D22	TOYOSHIMA, et al., Bidirectional movement of actin filaments along tracks of myosin heads, <i>Nature</i> 341:154-156 (1989)			

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number.

² Applicant is to place a check mark here if English language Translation attached.